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ROLLER

OHS Certificates of Competency
National Assessment Instrument

QUEENSLAND GOVERNMENT

Division of
Workplace Health & Safety
Department of Employment, Training and Industrial Relations

ROLLER

ASSESSMENT INSTRUMENT

FOR THE PRESCRIBED OCCUPATION OF ROLLER OPERATOR WHICH IS NOT INCLUDED IN THE SCOPE OF THE NATIONAL GUIDELINES FOR OCCUPATIONAL HEALTH AND SAFETY COMPETENCY STANDARDS FOR THE OPERATION OF LOADSHIFTING EQUIPMENT AND OTHER TYPES OF SPECIFIED EQUIPMENT

[NOHSC: 7019 (1992)]

July 1994

Loadshifting Equipment

ROLLER

ASSESSMENT

Part 1 Performance

Part 2 – Oral/Written

July 1994

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Assessor guidelines - general

1. Introduction

1.1 Scope

These general guidelines apply to all the assessment instruments for the certificates of competency prescribed by the *National Guidelines for Occupational Health and Safety Competency Standards for the Operation of Loadshifting Equipment and Other Types of Specified Equipment.*

Assessors should also be familiar with the publication *Assessment guidelines for National Occupational Health and Safety Certification Standard for users and operators of industrial equipment.*

1.2 Additional guidelines

Guidelines which provide additional specific information to certificate assessors are also included in each assessment instrument. Included, where appropriate, are specific instructions on the usefulness of training records (such as log books) and other certificates with overlapping competencies.

1.3 Evidence of competence

Evidence of competence is established in a number of ways. The methods used in the following instruments involve:

- assessment of practical performance
- written and/or oral answers to questions on underpinning knowledge.

2. Preparing for the assessment

2.1 Study the instruments

You need to read the assessment instruments and specific instructions carefully before beginning an assessment.

2.2 Confirm appointments

Prior to an assessment, you need to confirm the date, time and location of the assessment with the applicants and any other relevant people.

2.3 Equipment availability

The availability of equipment, materials and a suitable working area must be organised and confirmed, prior to the assessment.

2.4 Workplace factors

Because procedures and processes vary greatly between workplaces, it is important for assessors to plan their approaches to meet the requirements of the individual workplace.

Make sure you take the timeframe into account when planning the assessment and also make applicants aware of any time limits.

2.5 Selecting questions

Questions for the written/oral assessment should be randomly selected, either by hand or using the computer system, if applicable.

3. Conducting the assessment

3.1 Provide an explanation

Begin by explaining clearly to the applicants what is required of them. Check that applicants have provided (or have been provided with) the necessary tools and equipment.

3.2 Practical performance

Complete the performance checklist, as the applicant works through the required tasks. Wherever possible, this should be done in a normal working environment.

Do not ask the applicant questions while he or she is performing a task, as this can be distracting, and may affect the time taken to complete the assessment.

If, at any time, the applicant is endangering himself/herself or others, stop the assessment immediately. This indicates that the applicant is not yet competent and may require further training, before being reassessed.

Assessments should also be stopped, if equipment or property are likely to be damaged.

3.3 Knowledge

The knowledge assessment covers both oral and written exercises. The model answers provided with the knowledge assessment instruments are not necessarily exhaustive. Use your own judgement when scoring alternative answers.

3.4 Recording responses

Each item and question on the assessment forms you use is accompanied by a box. Assessors must complete every box as follows:

☐ CORRECT PERFORMANCE/ANSWER

☐ NOT YET ACHIEVED

☐ NOT APPLICABLE

If a box is marked incorrectly, cross out the mistake, mark the correct response alongside, and initial the change.

4. Determining competencies

4.1 Assessment summary

A specific assessment summary is given for each certificate class. This is to be filled in and signed by the assessor, and countersigned by the applicant.

The original and duplicate are given to the applicant. The applicant provides the original to the certifying authority. The triplicate is retained by the assessor.

4.2 Competency requirements

In order for you to deem an applicant competent, he or she must have completed each section of the assessment to the standard required. You should note any time constraints when arriving at your decision.

The standard required for each instrument is specified in the specific guidelines and/or on the summary page at the end of each assessment.

In the case of a repeat assessment, the assessor can decide to apply the whole or only part of the assessment.

4.3 Additional comments

Where an applicant fails to meet the standard of competence, you should add a written comment on the Assessment Summary, which briefly explains the problem.

Advice to the applicant, on the appropriate remedial action should also be included. This will also assist the certificate assessor, in the event that the applicant undergoes future reassessment.

Likewise, if an applicant demonstrates outstanding or remarkable performance, this should be noted.

4.4 Further investigation

As a certificate assessor, it is your role to determine whether or not an applicant has achieved the standard necessary for the certifying authority to be able to grant a certificate of competency.

Whenever you are unsure of the applicant's performance or knowledge, ask additional questions, and obtain additional evidence, before making your final decision.

GUIDELINES FOR OHS COMPETENCY STANDARDS

LOADSHIFTING EQUIPMENT

ROLLER

PERFORMANCE ASSESSMENT

JULY 1994

ROLLER

(Performance assessment)

Assessment Instrument – Specifications

The following performance assessment covers the Loadshifting Standard elements from [NOHSC: (1992)] which apply to a Roller.

1.1, 1.2, 1.3, 2.1, 3.1 & 3.2

Assessor guidelines specific

1 The assessment requires the operator to check the equipment, plan the work and to safely and competently operate the roller.

The assessment is performed in six sections:

1.1 Conduct routine pre-operational check on roller.

1.2 Inspect the site and plan the work.

1.3 Conduct pre-operational and post start up checks on the roller.

1.4 Drives the roller to the work area.

1.5 Rolls and consolidates the material.

1.6 Shut down the equipment and secure the site.

2 Prior learning and experience

2.1 Applicant who produces satisfactory documentary evidence (such as a log book) which establishes 50 days experience in the operation of a roller does not require assessment in sections 2,

3 The performance assessment can be conducted at
any location which has:

- sufficient clear space to operate the machine
- ground suitable for rolling and consolidating material.

4 Equipment and Resources Required:

- A roller.

- Suitable site on which to use the roller and consolidate soil.

5 Unless other arrangements are agreed to by the assessor, it will be the responsibility of the applicant, applicant's employer or trainer to provide the required equipment and resources.

6 To be assessed an applicant must wear:

- safety helmet (where required)
- appropriate footwear
- other other protective clothing and equipment as appropriate

7 The performance of each applicant is to be recorded on the assessor's checklist.

8 Safety of personnel:

When an applicant is working dangerously, recklessly or without the necessary co-ordination, the assessor must direct the applicant to cease work and terminate those parts of the assessment immediately.

9 The items in the shaded boxes are of critical importance. Failing to get any of these correct means that competency has not been achieved and the applicant must be failed.

10 Where an applicant as 'not yet competent' he/she must be informed of the reason(s) for the failure in order to gain further appropriate training.

11 The full performance assessment can take up to 30 minutes.

12 The general assessment requirements are set out in Assessors guidelines - general.

13 The applicant's competence in each unit is to be summarised for both performance and knowledge on the summery sheet. Competency is achieved for a unit when the required number of boxes for the unit have been ticked or marked "N/A".

Overall competency is achieved when all competence in all units has been assessed.

CONDUCT ROUTINE CHECKS:

Performance Criteria 1.1.1. and 1.1.2

1.1 Routine checks on vehicle/equipment:

- Tyre condition and inflation or condition of drums or wheels ☐

Checks liquid levels -

- fuel ☐
- hydraulic oil ☐
- engine oil ☐
- battery ☐
- coolant ☐

Checks equipment for defects –

- damaged, worn or broken parts ☐
- scrapers, sprinklers and mats (if applicable) ☐
- loose nuts, bolts ☐
- hoses and fittings ☐
- grease holes and grease pins ☐

PLAN WORK AND CHECK EQUIPMENT:

1.2 Inspects site and plans work:

Performance Criteria 1.2.1, 1.2.3 and 1.2.5

Identify Hazards -

- rough/uneven/unstable terrain ☐
- obstructions ☐
- recently filled trenches ☐
- soft and sloping edges ☐

Access and path of movement is indicated -

- to work area ☐
- for work ☐

Appropriate equipment for the task

- equipment is appropriate for the task ☐

Performance Criteria 1.3.1.

1.3 Conducts pre-operational and post start-up checks in accordance with manufacturer's specifications/ operating manual.

- mounts correctly ☐
- adjusts seat secures safety belt ☐
- in neutral ☐
- warning device ☐
- starts engine gauges ☐
- warm up allowed ☐
- checks vibrator (if applicable) ☐
- clear for travel ☐
- foot for brake ☐
- holding brake ☐
- steering ☐

SHIFTS LOAD:

Performance criteria 2.1.1 and 2.1.3

1.4 Drives to the work area:

- ensures travel direction clear ☐
- selects appropriate route ☐
- travels at safe speed ☐

1.5 Rolles and consolidates material (The rolling will depend work and type of material being rolled):

- on soft edges or loose material conducts first run without vibrator (if applicable) ☐
- changes lanes on a compacted or solid surface ☐
- overlaps each pass or run ☐
- uses an appropriate rolling pattern (kerb to crown) ☐
- turns off vibrator when not consolidating surface ☐
- safe and acceptable speed for compaction ☐

Performance criteria 2.1.1, 2.1.4, 2.1.5 and 2.1.6
GgeneGeneral performance of sections and 5.

- equipment is suitable for the work ☐
- machine suitable for ground conditions ☐
- competently rolls and consolidates material ☐
- equipment operated at a safe speed ☐
- signals are interpreted and observed ☐

SHUTS DOWN EQUIPMENT AND SECURES SITE:

Performance criteria 3.1.1, 3.1.2 and 3.2.1

1.6 Shuts down equipment and secures site:

Parks equipment -

- vibrator turned off for travel (if applicable) ☐
- machine parked in suitable area ☐

Shuts down equipment -

- neutralises controls ☐
- sets parking brake ☐
- idles to stop and locks ignition ☐

Avoiding hazards –

- parks away from danger areas ☐
- removes keys ☐

Roller
(Knowledge)

ASSESSMENT INSTRUMENT SPECIFICATIONS
The following knowledge assessment covers the Loadshifting Standard elements from [NOHSC:(1992)] which apply to a Roller.

1.1, 1.2, 1.3, 2.1, 3.1 & 3.2

Assessor guidelines - specific

1. Knowledge assessment for roller is divided into three units and seventeen sections (performance criteria 1.1.1, 1.1.2 etc).

2. To satisfy the requirements for competency the applicant must correctly answer (either in writing or orally) the specified number of questions in each of the following sections:

Unit 1.0

1.1 Conduct routine checks

1.1.1 (select 4)

1.2 Plan work

1.2.1 (select 2)
1.2.2 (select 2)
1.2.3 (select 1)
1.2.4 (select 1)
1.2.5 (select 1)

1.3 Check controls and equipment

1.3.1.1(select 1)
1.3.1.2(select 1)

Unit 2.0

2.1 Shift load

2.1.1 (select 1)
2.1.2 (select 1)
2.1.3 (select 3)
2.1.5 (select 1)
2.1.7 (select 1)

Unit 3.0

3.1 Shut down equipment

3.1.1 (select 1)
3.1.3 (select 1)

3.2 Secure site

3.2.1 (select 1)

3. Prior learning and experience:

An applicant who holds a scraper, grader, dozer, front-end loader/backhoe, front-end loader, skid steer loader, excavator or dragline certificate and who answers questions for performance criteria 1.1.1, 1.2.2, 1.3.2 and 2.1.5 satisfactorily, is not required to complete the rest of the assessment.

4. The full knowledge assessment of twenty7 four questions can take up to thirty minutes.

5. The items in the shaded boxes are of critical importance. Failing to get any of these correct means that competency has not been achieved and the applicant must be failed.

CONDUCT ROUTINE CHECKS

Performance criteria 1.1.1
(select 4 including 1 with a shaded box)

1. What action would you take with any structural defects you found while conducting a external check on the vehicle/equipment ☐
   (Report the defects to the authorised person or take action according to site procedures.)

2. What should be provided on the roller to prevent the operator from being dislodged from the seat of the roller? ☐
   (A safety belt.)

3. Name three defects that you would look for when conducting a routine check on the hydraulic system of the roller. ☐
   (Hydraulic oil leaks, loose connections and hoses for splits, fractures or bulges.)

4. Why shouldn't the hydraulic oil storage tank be filled above the filled mark? ☐
   (Space in the tank is needed for displacement in the system.)

5. What problem could be indicated by bubbles or milky engine oil in the sump? ☐
   (Water leaking into the sump.)

6. When changing a battery which battery clamp should be removed first? ☐
   (The grounded battery clamp.)

7. Briefly describe how you would check the air pressure of water filled tyres on a roller. ☐
   (Check with the valve at the top of the wheel)

8. What effect would the heat from hot asphalt have on the tyre pressure of a rubber tyred roller? ☐
   (Increases the tyre pressure.)

9. How would you establish the service and the frequency of the service to be carried out on the machine you are required to operate? ☐
   (By the service manual provided by the manufacturer.)

10. What should be the first check of your machine at the start of your shift? ☐
    (Walk around it looking for visual defects.)

11. Name five pre-operational checks that should be carried out on the loadshifting equipment before the unit is started. ☐
    (Radiator, battery, fuel, oil, hydraulic lines, tyres or tracks, structure etc.)

12. To establish if the required service had been conducted what document would you refer to? ☐
    (The log book.)

PLAN WORK

Performance criteria 1.2.1 (select 2)

13. Why should side hill travel be avoided where possible? ☐
    (There is a greater risk of turning the machine over with side hill travel.)

14. What effect would a rough or stony surface have on the operating speed of the roller? ☐
(It would decrease the safe operating speed of the roller.)

15. Where a danger exists, what should be posted or positioned to warn persons of a danger? ☐
(Warning signs.)

16. When rolling a public road where should warning signs be positioned to advise of a potential hazard or condition? ☐
{(At the approach to the work area.)(Approximately 30M before)}

17. What should be erected where a dangerous obstruction is caused by earthworks being performed on a public road. ☐
(Barricades)

18. How should the flow of road traffic be controlled where signs and barricades are considered inadequate to control a potential hazard? ☐
{(By a flagman.)(Or by police officer)}

19. What is the danger of rolling near the edge of unconsolidated fill? ☐
(The edge fill may collapse.)

Performance criteria 1.2.2 (select 2 including 1 with a shaded box)

20. Under what conditions should a roller operator wear respiration equipment? ☐
(Where there is a health risk to the operator from dust or contamination in the air.)

21. When should ear protection be worn? ☐
(Whre the noise could contribute to the loss of hearing)

22. If there is a likely hood of the roller being overturned what must be provided on the roller to protect the operator? ☐
(A roll over protective structure and safety belts.)

23. When should a person wear a safety helmet? ☐
(Where the person could be struck on the head.)

24. What is the minimum type of footwear that an operator should wear to operate loadshifting equipment? ☐
(Non-slip footwear that encloses the foot)

Performance criteria 1.2.3 (select 1)

25. Which is the preferred route of travel, diagonally across or directly down a sloping surface? ☐
(Directly down the sloping surface)

26. Why shouldn't a gear change be made while driving a heavy roller up a steep sloping surface? ☐
(If the gear change was missed the heavy roller may not be able to be safely controlled.)

27. What gear should be selected to travel down a steep sloping surface? ☐
(A low gear. The gear required to climb the sloping surface)

Performance criteria 1.2.4 (select 1)

28. In hazardous working areas where permission is required to work what must the operator ensure before the work is commenced? ☐
(That the required permits have been obtained)

29. What is required to be obtained before unregistered rubber tyred roller is driven along a public road? ☐
(An unregistered vehicle permit.)

30. What government licence do you require to drive a rubber tyred roller on the road? ☐
(A class licence for plant up to 4.5 tonnes or other jurisdiction as applicable. ie Australian heavy vehicle licence.)

Performance criteria 1.2.5 (select 1)

31. Name three types of rollers? ☐
(Static rollers, vibratory rollers and multi rubber tyred rollers.)

32. How does vibrating roller compact the surface? ☐
(By the rollers weight and the rolling and vibration of the roller drum.)

33. How does static roller compact the surface? ☐
(By the rollers weight and the rolling of the roller drums or wheels.)

34. How does a multi rubber tyred roller compact the surface? ☐
(By kneeling the material with the weight the roller and rolling of the tyres.)

CHECK CONTROLS AND EQUIPMENT
Performance Criteria 1.3.1 (select 1)

35. On the post start-up check you notice a bulge form in a hydraulic hose. What action would you take? ☐
(Switch off the machine and have the hose replaced.)

36. When should tests, checks and inspections be made by the operator on the loadshifting equipment that is to be operated? ☐
(Daily before use)

Performance criteria 1.3.2 (select 1)

37. What action would you take with damage and defects found on the machine? ☐
(Report the damage and defects to the authorised person or to site requirements and refrain from operating if a danger exists.)

SHIFT LOAD

Performance criteria 2.1.1 (select 1)

38. What is used or provided to prevent the hot asphalt from sticking to the roller drums? ☐
(Scrapers, water sprinklers and mats.)

39. When using a vibratory roller what procedure should you adopt for the first run against the kerb on uncompacted soil? ☐
(Slowly and without the vibrator.)

40. In relation to the weight of a roller what advantage does a vibratory roller have? ☐
(Greater compaction ability for its weight.)

Performance criteria 2.1.2 (select 1)

41. What effect would leaving the vibrator of the roller on while the machine is stationary on soil? ☐
(The roller would vibrate itself into the soil.)

Performance criteria 2.1.3 (select 4 including 1 with a shaded box)

42. Which of the following directions should rolling be performed on a large sloping surface. Across, diagonally across, or up and down the sloping surface? ☐
(Up and down the sloping surface.)

43. Is it permissible to carry a passenger on the roller? ☐
(No.)

44. As an operator would you leave an unattended roller engine running? ☐
(No.)

45. On a road where should the rolling commence from. (The crown or left or right of crown or the kerb side? ☐
(The kerb side.)

46. How would you establish the capabilities and limitations of the equipment? ☐
(By information provided by the employer and documented by the manufacturer.)

47. Before reversing a machine what precaution should be taken? ☐
(Ensure the direction of travel is clear.)

48. What happens if too much water is used on the soil being rolled and compacted? ☐
(Rolling would bring the excess water to the surface and prevent the soil from being compacted properly.)

49. If cracks appear after rolling with a vibrator roller what procedure should be adopted to remove the cracks? ☐
(Perform runs without the vibrator to remove the cracks.)

50. What rolling pattern should be adopted for the runs on a road? ☐
(The runs should overlap the previous run.)

51. Would you coast the roller downhill? ☐
(No.)

52. When rolling with a vibratory roller what should be done before the roller is stopped? ☐
(The vibrator on the roller should be turned off.)

53. What direction would you approach and how would you cross a ditch? ☐
(At an angle and slowly.)

54. When travelling what would you do before travelling down a steep grade? ☐
(Reduce speed with service brake and select the appropriate gear for the grade.)

Performance criteria 2.1.5 (select 1) (Oral)

55. Applicant to state the meaning of the hand signal of "stop" demonstrated by the examiner. ☐
(Stop)

(Written)

56. State the meaning of the illustrated diagram. ☐
(Stop)

Performance criteria 2.1.7 (select 1)

57. While operating the roller what action would you take if a hydraulic hose sprung a leak? ☐
{Have repairs carried out. (Replace hose.)}

58. What actions would you take if a vibratory roller near a bank started to slide ☐
(Immediately stop the vibrator and idle the engine. Get help if it not possible to drive or reverse out slowly.)

59. If the roller has insufficient power to climb the hill in the gear that was selected, what action should be taken? ☐
(Reverse down the hill and select the correct gear to climb the hill.)

SHUT DOWN EQUIPMENT

Performance criteria 3.1.1 (select 1)

60. Name three areas where you would not park the roller. ☐
(Access ways, near overhangs, refuelling sites, tidal or flood areas, adjacent to an excavation)

61. Where possible what type of surface should be selected to park the roller on? ☐
(A level surface.)

62. Which direction should the roller face if it has to be parked on a sloping surface? ☐
(Across the slope.)

Performance criteria 3.1.3 (select 1)

63. How would you remove the radiator filler cap of a roller that has not completely cooled off? ☐
(Slightly loosen cap to release pressure and then slowly remove cap.)

64. What post-operational checks should be carried out by the operator on the loadshifting equipment to prepare it ready to be reoperated? ☐
(Check the structure and equipment for defects and wear and the oil, fuel and water levels.)

SECURE SITE

Performance criteria 3.2.1 (select 1)

65. What shall be provided when a roller has to be parked on or protrudes onto an access way? ☐
(Barricades, lights and signs)

65 For what reason should the key be removed from the ignition of the machine? ☐
(To prevent unauthorised movement)

Assessment summary

- **Roller**

Unit	Form of assessment	Total number of boxes in the assessment	Number of boxes given ✔ or NA	Number of boxes required to meet standard	Were all critical boxes given ✔ or NA?		Assessment standard requirements achieved *		
1	Performance	30		27	Yes	No	Yes	No	
	Knowledge	13		8	Yes	No	Yes	No	
	Assessment completed within time allowed						Yes	No	NA
2	Performance	14		12	Yes	No	Yes	No	
	Knowledge	8		5	Yes	No	Yes	No	
	Assessment completed within time allowed						Yes	No	NA
3	Performance	7		6	Yes	No	Yes	No	
	Knowledge	3		2	Yes	No	Yes	No	
	Assessment completed within time allowed						Yes	No	NA

* Performance standard = Number of items required to meet standard (including all critical boxes)
Knowledge standard = Number of questions required to meet standard (including all critical boxes)

Summary

Candidate is: **(circle the result obtained)**
- **COMPETENT**
- **NOT YET COMPETENT**

Date: .....

Name of assessor .....

Name of candidate .....

Signature

Signature .....

Comments/feedback
(assessors to make any additional comments which clarify the assessment)

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